EPI-LOG

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You Know It's Pertussis—*Now What Do You Do?* Management, Treatment, and Prevention of Pertussis

Case scenario: A 31 year-old female who presented with a 2-week cough illness with paroxysms and post-tussive vomiting has pertussis confirmed by PCR. Her household contacts include a 3-month old daughter and a spouse who works in landscaping. She works in an office and shares a cubicle with a woman who is 37 weeks pregnant. She also carpools with a 52 year-old woman who lives alone. The infant, spouse, and carpool rider are all asymptomatic. The pregnant co-worker recently developed a runny nose and slight cough.

You are consulted by one or more of the exposed persons: Who should be tested and/or treated, including her spouse, daughter, co-worker, the carpool buddy, or all of them? For extra credit, who is not on this list yet but needs to be assessed as well?

Management of pertussis cases: Treatment and post-exposure prophylaxis (PEP)

Confirmed cases: All confirmed cases should (1) be treated with an appropriate antibiotic (see box) to prevent further spread of the illness and 2) avoid close contact with others until completion of 5 days of treatment with an appropriate antibiotic.

"High priority" contacts: Public Health routinely recommends PEP for all "high priority" close contacts of pertussis cases. "High priority" contacts include:
- Children under one year of age, because of their increased risk for severe disease
- Pregnant women because of the potential for transmission to newborns, health care workers (HCW), and other pregnant women in obstetrical offices and prenatal classes
- HCWs with face-to-face patient contact, because of the potential for transmission to patients at risk for severe disease
- Close contacts of a case who may transmit pertussis to other persons at high risk for severe disease (e.g., household members of, and other persons who live or work with, infants or pregnant women, such as the index case described above)

The case's spouse, 3-month old infant, and pregnant co-worker are "high-priority" contacts. The pregnant, symptomatic co-worker should be tested and treated promptly without waiting for test results. Ideally, the clinician treating the case should arrange for treatment of the household contacts.

You get extra credit if you know that *the HCWs who evaluated and tested the case need to be assessed as well*. PEP would be recommended if they did not use droplet precautions* (including wearing a mask) during the visit.

Recommended Treatment and Post-Exposure Prophylaxis Regimens for Pertussis [1, 2]

1. Azithromycin:
- Infants < 6 months:10 mg/kg per day for 5 days
- Infants and children aged > 6 months: 10 mg/kg (maximum: 500 mg) on day 1, followed by 5 mg/kg per day (maximum: 250 mg) on days 2-5
- Adults: 500 mg on day 1, followed by 250 mg per day on days 2-5

2. Clarithromycin:
- Infants aged <1 month: not recommended
- Infants and children aged > 1 month: 15 mg/kg per day (maximum: 1 g per day) in 2 divided doses each day for 7 days
- Adults: 1 g per day in two divided doses for 7 days

3. Erythromycin:
- Infants aged <1 month: not preferred because of risk for infantile hypertrophic pyloric stenosis (IHPS). Azithromycin is the recommended antimicrobial agent. If azithromycin is unavailable and erythromycin is used, the dose is 40-50 mg/kg per day in 4 divided doses. These infants should be monitored for IHPS.
- Infants aged > 1 month and older children: 40-50 mg/kg per day (maximum: 2 g per day) in 4 divided doses for 14 days
- Adults: 2 g per day in 4 divided doses for 14 days

4. Alternate agent TMP-SMZ:
Trimethoprim-sulfamethoxazole (TMP-SMZ) is used as an alternative to a macrolide antibiotic in patients aged > 2 months who have contraindication to or cannot tolerate macrolide agents, or who are infected with a macrolide-resistant strain of B. pertussis. Macrolide-resistant B. pertussis is rare. Because of the potential risk for kernicterus among infants, TMP-SMZ should not be administered to pregnant women, nursing mothers, or infants aged <2 months.
- Infants aged < 2 months: contraindicated
- Infants aged > 2 months and children: trimethoprim 8 mg/kg per day, sulfamethoxazole 40 mg/kg per day in 2 divided doses for 14 days
- Adults: trimethoprim 320 mg per day, sulfamethoxazole 1,600 mg per day in 2 divided doses for 14 days

[1] CDC. Recommended Antimicrobial Agents for the Treatment and Postexposure Prophylaxis of Pertussis. MMWR. 2005. 54(No.RR-14).

[2] Always refer to the package insert or current PDR for complete prescribing information. The recommended antimicrobial agents and dosing regimens for PEP are the same as those for treatment of pertussis.

* Pertussis is spread through direct contact with infectious respiratory secretions by droplet transmission. Such droplets generally travel 3 feet or less when an infected person talks, coughs, or sneezes.

Other close contacts (not at increased risk of severe pertussis, such as the carpool rider), should be counseled about the signs and symptoms of pertussis, the availability of PEP treatment, and be advised to seek medical evaluation and testing if they become symptomatic within 21 days of exposure. Clinicians may elect to treat "non-high-priority" contacts" in some circumstances.

Prevention
Health care providers should ensure that infants and children are up-to-date on their recommended immunizations including DTaP. **A single dose of Tdap is recommended for adults 19 to 64 years of age to replace the next booster dose of Td. This is particularly important for adults who have close contact with infants < 12 months of age and HCW's. Ideally women should have a dose of Tdap prior to becoming pregnant.** Women who have not previously had Tdap should receive a dose in the immediate postpartum period, prior to hospital discharge.

Pertussis should be considered in the differential diagnosis of: (1) patients with cough illness > 2 weeks duration, (2) patients with respiratory illness of any duration who have had contact with persons with a prolonged cough illness (or pertussis) and (3) infants <12 months of age with respiratory tract symptoms of any duration, even if the infant is immunized against pertussis or positive for RSV.

Pertussis testing is available at the Public Health - Seattle & King County Laboratory (206-744-8950) as well as local reference labs. Pertussis is immediately notifiable to Public Health upon suspicion at (206) 296-4774.

***Chlamydophila psittaci* in Birds Sold in the U.S.**

In early January Public Health learned that birds potentially infected with *Chlamydophila psittaci* were shipped to PetSmart stores in the US, including in King County. Two human cases of psittacosis linked to this exposure occurred in Minnesota but no cases have been identified in King County.

If you see a patient with an illness consistent with psittacosis, ask about exposure to birds purchased at Petsmart between October 1 and December 19, 2007. Diagnosis can be confirmed by acute and convalescent sera for *Chlamydophila* IgG and IgM drawn at least 2 weeks apart. A single *Chlamydophila* IgM reciprocal titer of 16 or greater is also diagnostic. Please call Public Health at (206) 296-4774 to report suspected cases, and to facilitate testing.

More information on psittacosis is available at:
www.metrokc.gov/health/prevcont/psittacosis.htm

Influenza Monthly Update

Influenza is on the rise in King County. The number and proportion of specimens submitted testing positive for influenza in King County is increasing. **Vaccine supplies remain plentiful, and it is not too late to vaccinate anyone who wants protection from influenza**. During week 4 (ending January 26, 2008), Public Health's sentinel provider network saw levels of flu activity that were higher than the same period last year, on a rising trend that precedes but remains below last year's peak. The syndromic surveillance system similarly indicates that increased ED visits attributed to influenza-like illness (ILI) are occurring earlier this flu season compared to last, with a comparable age distribution.

Recently the Centers for Disease Control and Prevention reported that the number of pediatric influenza deaths last season in which pneumonia or bacteremia due to *Staphylococcus aureus* was also present was a five-fold increase over the 2 previous influenza seasons. No pediatric influenza deaths have been reported during the 2007-08 season in King County. A Health Advisory is at www.metrokc.gov/health/providers/epidemiology. More information about influenza activity locally and nationally is on the Public Health website.[1]

Disease Reporting

AIDS/HIV..... (206) 296-4645
STDs..... (206) 744-3954
TB ..... (206) 744-4579
All Other Notifiable Communicable Diseases (24 hours a day) .... (206) 296-4774
Automated reporting line for conditions not immediately notifiable..... (206) 296-4782

Hotlines

Communicable Disease ..... (206) 296-4949
HIV/STD..... (206) 205-STDS

Public Health-Seattle & King County

Online Resources

Home Page: www.metrokc.gov/health/
The *EPI-LOG*: www.metrokc.gov/health/providers
Communicable Disease listserv (PHSKC INFO-X) at:
mailman.u.washington.edu/mailman/listinfo/phskc-info-x

Influenza Surveillance Update[1]:
www.metrokc.gov/health/immunization/fluactivity.htm

Reported Cases of Selected Diseases, Seattle & King County 2007

	Cases Reported in December		Cases Reported Through December	
	2007	2006	2007	2006
Campylobacteriosis	23	11	262	258
Cryptosporidiosis	5	7	46	45
Chlamydial infections	470	416	5833	5608
Enterohemorrhagic *E. coli* (non-O157)	0	0	5	2
***E. coli* O157: H7**	0	4	38	40
Giardiasis	12	8	151	117
Gonorrhea	103	136	1471	1786
***Haemophilus influenzae* (cases <6 years of age)**	0	0	2	3
Hepatitis A	0	0	17	17
Hepatitis B (acute)	2	5	23	21
Hepatitis B (chronic)	80	70	839	840
Hepatitis C (acute)	1	0	7	6
Hepatitis C (chronic, confirmed/probable)	171	140	1435	1525
Hepatitis C (chronic, possible)	39	23	326	257
Herpes, genital (primary)	43	76	616	798
HIV and AIDS (including simultaneous diagnoses with AIDS)	26	45	369	286
Measles	0	0	1	0
Meningococcal Disease	0	1	5	11
Mumps	1	0	8	2
Pertussis	31	4	119	105
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	13	16	242	205
Shigellosis	2	1	50	52
Syphilis	19	22	175	176
Syphilis, congenital	0	0	0	0
Syphilis, late	6	3	70	72
Tuberculosis	28	16	161	145

The *EPI-LOG* is available in alternate formats upon request.